NEAQS 2004

Meteorological summary for Gulf of Maine and northern coastal New England

Wayne M. Angevine

19 July

February 3, 2006

General

(From PSU synoptic summary): The deep upper-level longwave trough that has produced cloudy and wet conditions for the past few days continued to dominate much of the forecast area. Overcast to broken skies persisted for much of the forecast area. The culprit was a surface low pressure that continued to slowly track northeastward through Long Island Sound. By 00Z on July 20th this low was located in Connecticut and Rhode Island. Attendant to this surface feature was a weak warm front which draped itself nearly parallel to the Maine coastline and a similarly weak cold front that extended from Connecticut southward to offshore of the Mid-Atlantic coastline. Showers and isolated thunderstorms were reported for much of the area throughout the period. Most of the precipitation over northern and central New England was generally diminishing in aerial coverage. Winds were from the E to SE in the Gulf of Maine at 5-10 kts. Winds were from the SW at 10 kts for southern New England east of Rhode Island. Highs ranged from the mid 50's to low 60's(12-16C) for offshore locations with the colder readings to the north. Inland, temperatures ranged from the upper 60's to low 70's (19-22C) for northern New England. Lows stayed in the low to mid 60's (16-18C) for most locations. Fog was prevalent along the coastline during the morning and into early afternoon for much of coastal Maine into northern parts of the Gulf. Broken to overcast conditions existed for much of the forecast area, but near the end of the period in eastern New England scatted to broken conditions were reported.

Ozone and CO

Modest levels of ozone were observed at the ship early in the day (UTC) in medium-range flow from the urban corridor. The air became gradually cleaner as the day progressed and the footprint became more maritime.

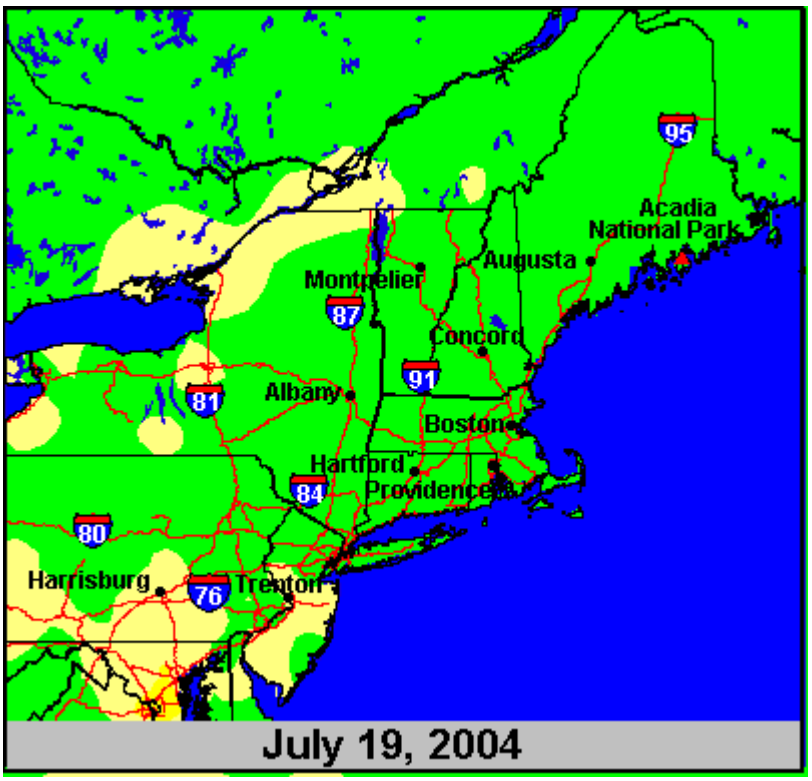

Figure 1: Maximum 1-h surface ozone from EPA AIRNOW

Footprints

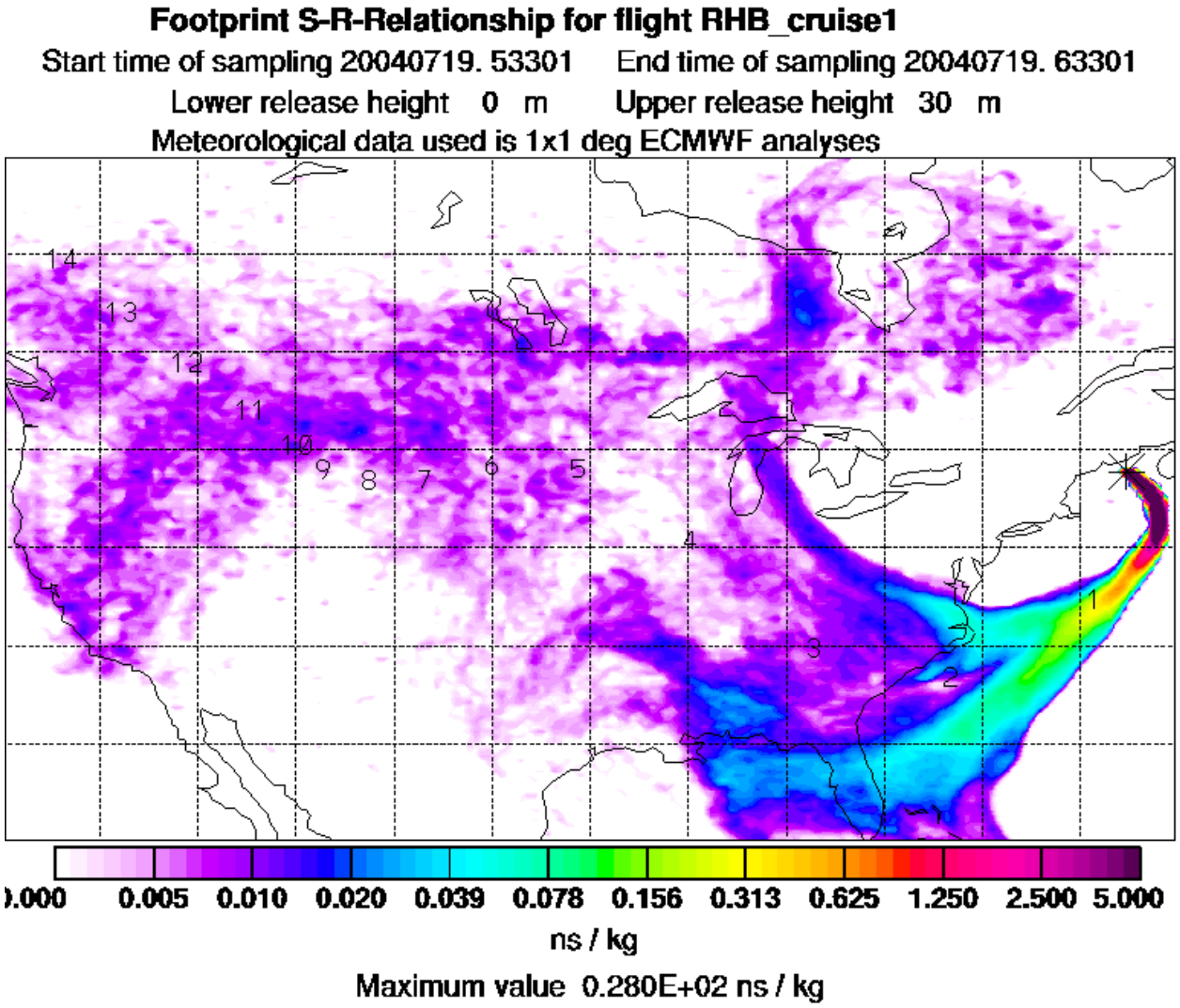

Figure 2: FLEXPART footprint for 0533-0633 UTC

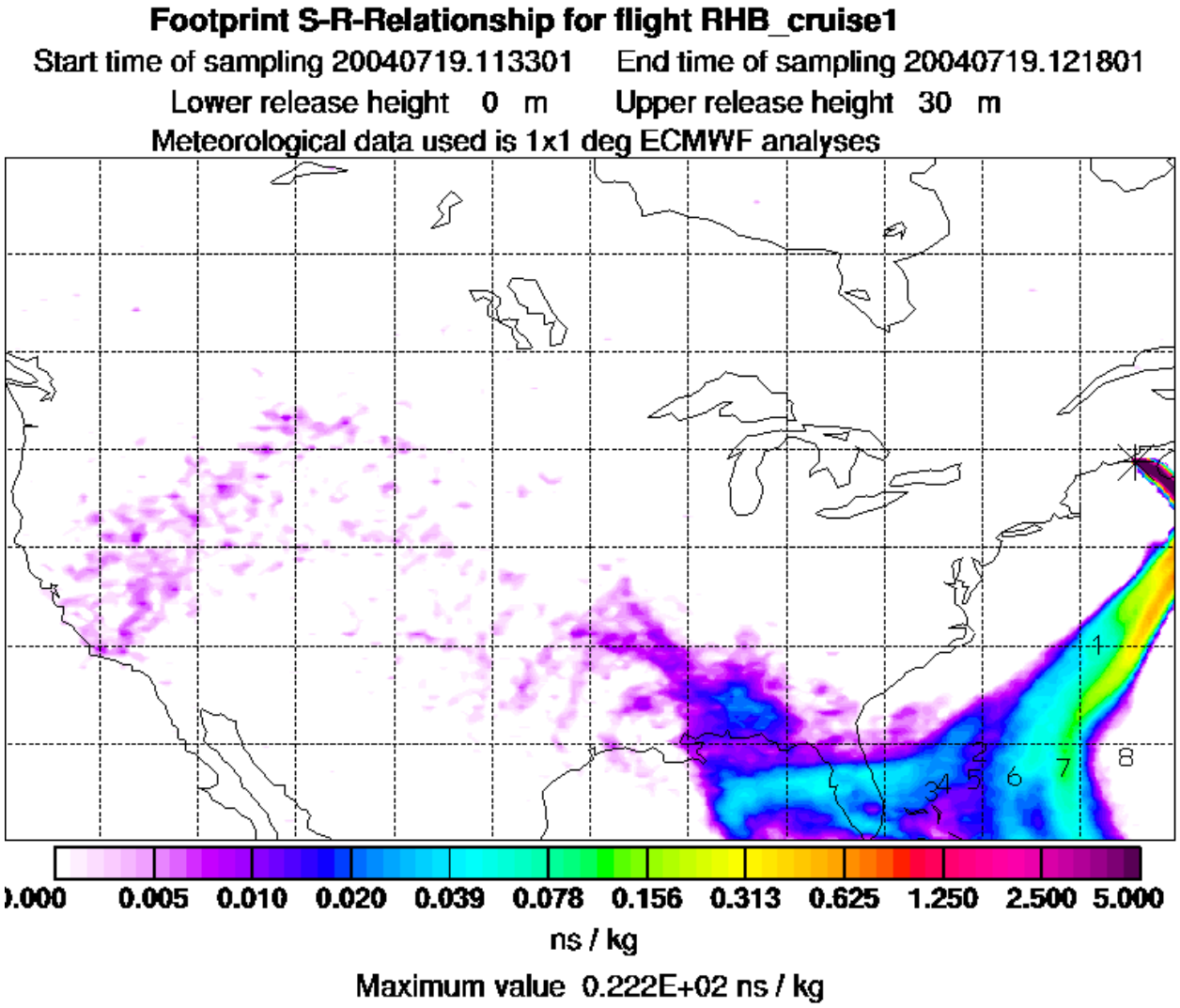

Figure 3: FLEXPART footprint for 1133-1218 UTC

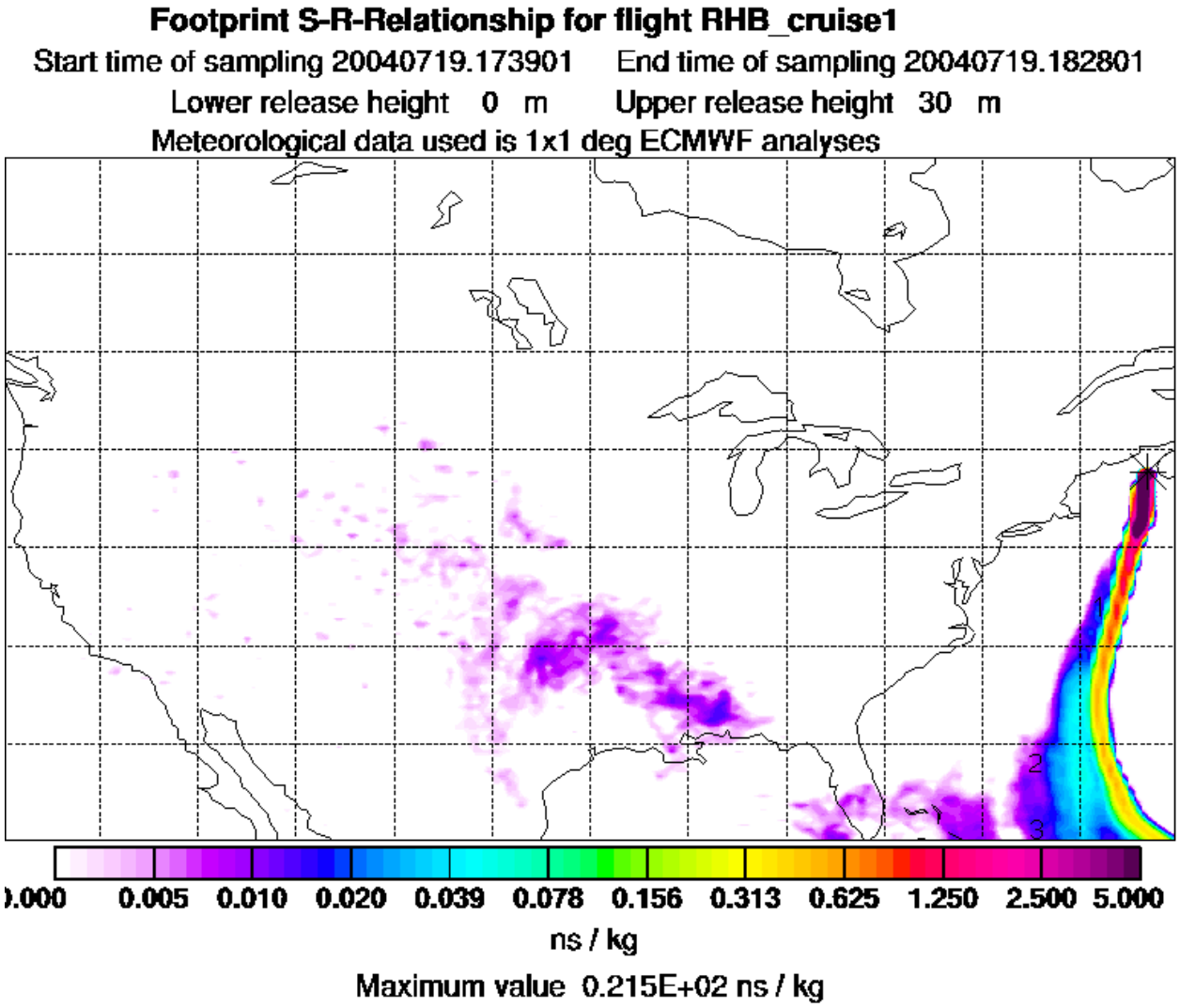

Figure 4: FLEXPART footprint for 1739-1828 UTC

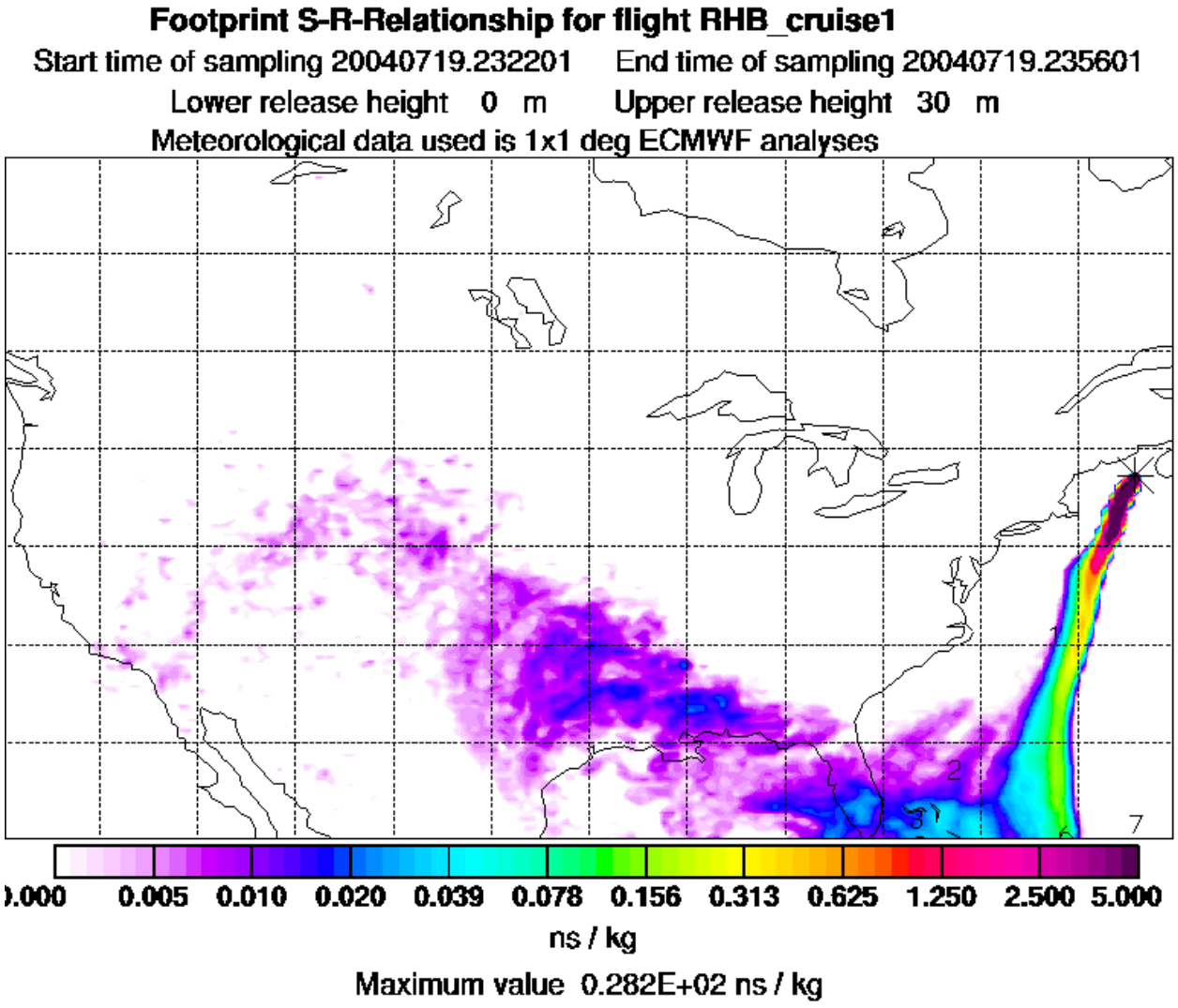

Figure 5: FLEXPART footprint for 2322-2356 UTC

Ship track

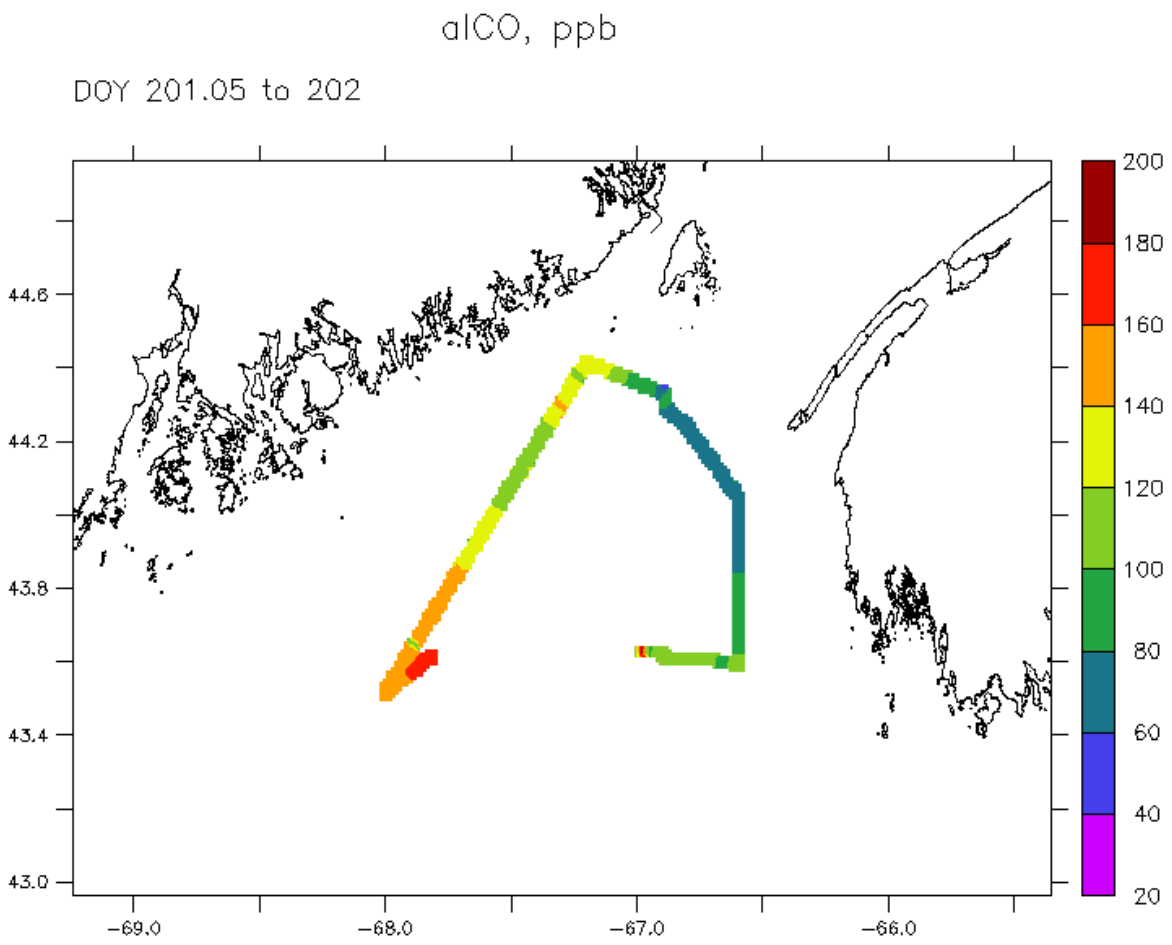

Figure 6: CO along the ship track.

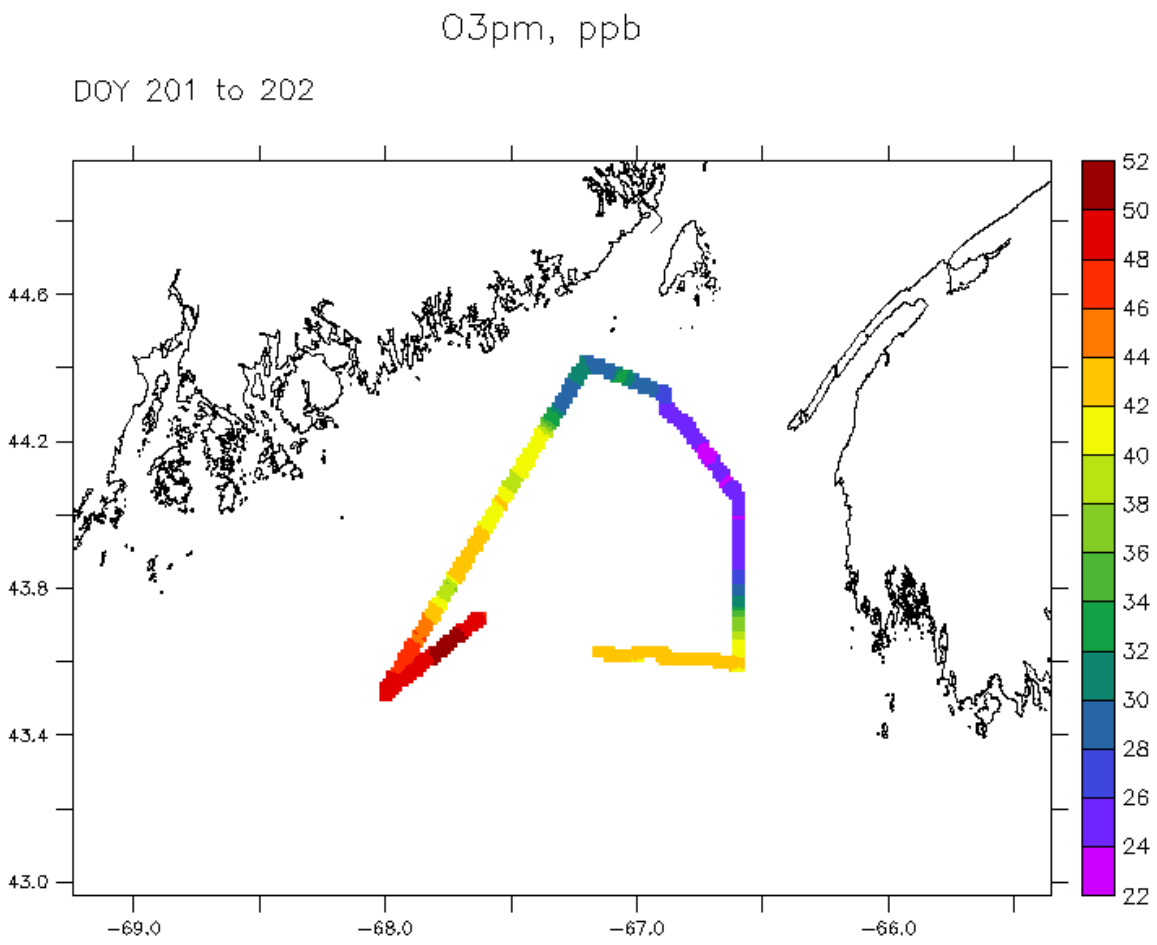

Figure 7: Ozone along the ship track

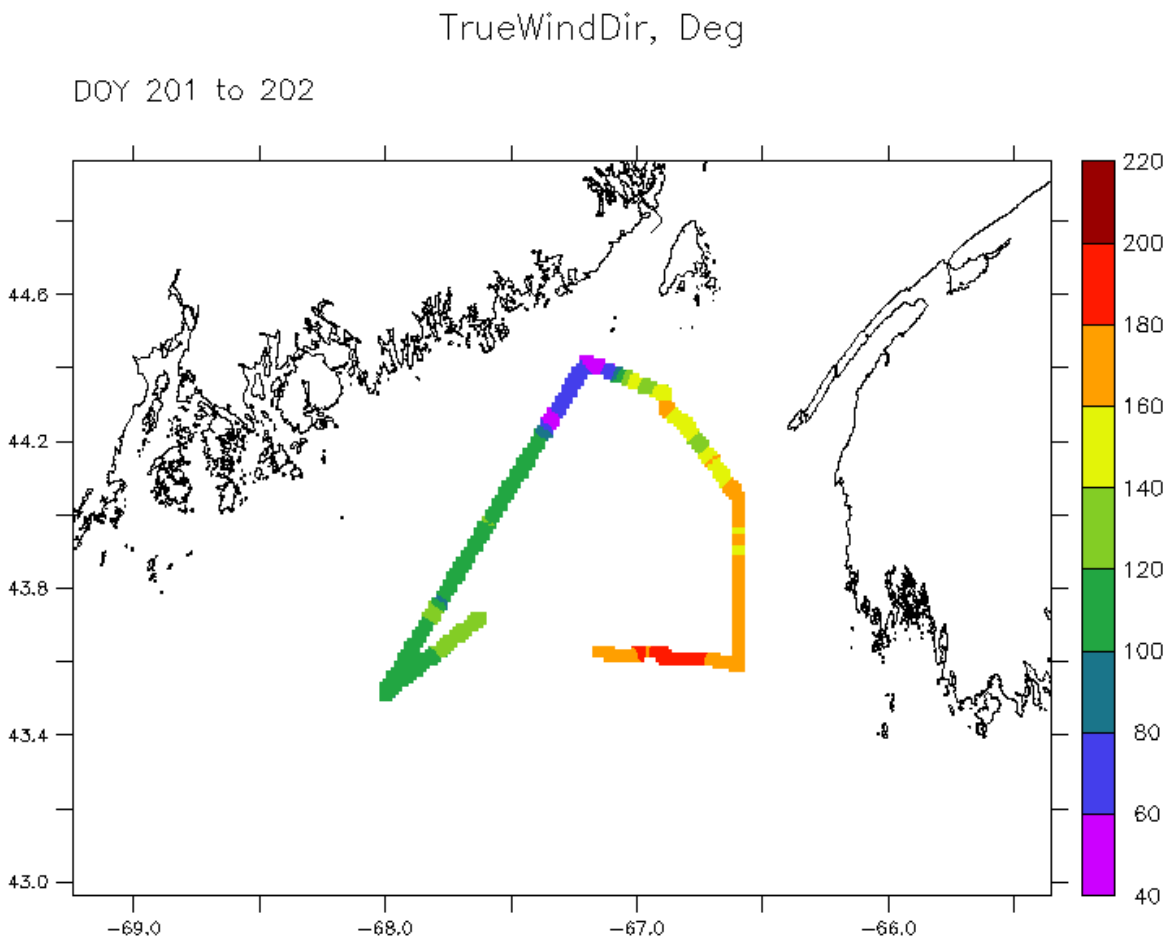

Figure 8: Wind direction along the ship track